ARCOS – Validator Guide

1. Purpose of this Guide

This guide explains the role of the Validator in ARCOS (AI Rule-Constrained Orchestration System). It is written for developers, clarifying that the Validator is a process with defined boundaries. Developers can implement it however they wish, provided that schema-based communication protocols are respected. The Validator must handle specific inputs and produce specific outputs, but internal design is entirely flexible.

2. Role in ARCOS

The Validator ensures generated outputs comply with domain schemas and rules. It returns structured validation reports or requests for clarification.

3. Responsibilities

- Validate Producer outputs against Domain_Rules.xml and Predefined_Domain_Rules.xml.
- Return structured ValidatorReport.xml showing CRUD (for the BLEU example) and rule compliance.
- Ask for clarification if inputs are incomplete or ambiguous.

4. Workflow

1. Receive ValidatorRequest from the Orchestrator.
2. Check Producer outputs against schemas and rules.
3. Produce ValidatorReport.xml with the ValidatorResponse or with Clarification request in the response.
4. Optionally trigger retries through Orchestrator.

5. Inputs and Outputs

- Inputs: ProjectSpec, DomainSchema, PredefinedRules, CustomRules, ProducerOutput.
- Outputs: Success, or error with a ValidatorReport.xml (detailed compliance results) or a Clarification Request.

6. Example (BLEU Inventory Domain)

In the BLEU domain, the Validator checks if inventory items conform to rules (e.g., unique IDs, required fields, valid references). It generates a ValidatorReport.xml detailing success/failure of each check.

7. Benefits for Developers

- Clear contracts: validate against XSD and rule files only.
- Developers free to design the validation engine internally (custom logic, libraries, approaches).
- Supports iterative refinement with retries and clarifications.

8. Conclusion

The Validator is a well-defined ARCOS component: it operates within schema-constrained boundaries, while giving developers freedom of implementation. By respecting the communication contracts, developers ensure that their {title} agent integrates seamlessly into ARCOS flows.